Amendments to the Claims.

The following listing of claims replaces all prior versions and listings of claims.

Listing of Claims.

Please withdraw claims 41-54 without prejudice or disclaimer of the subject matter contained therein.

1. (Original) A method for processing a plurality of digital streams, wherein each digital stream includes packets sequenced for continuous presentation, said method comprising:

receiving packets for each of said plurality of digital streams;

associating each of said packets with a respective stream of said plurality of digital streams; and

determining that a subset of packets of one of said plurality of digital streams is to be processed before other subsets of packets.

2. (Original) The method of claim 1 further comprising storing said received packets in a buffer.

3. (Original) The method of claim 2 further comprising
selecting said subset of packets for processing; and
retrieving said subset of packets from said buffer.

4. (Original) The method of claim 3 wherein said subset of packets is retrieved in an order received.

5. (Original) The method of claim 1 further comprises assigning a priority to each of said plurality of digital streams.

6. (Original) The method of claim 5 further comprises determining said subset of packets to be processed based on said one of said plurality of digital streams being associated with a highest priority.

7. (Original) The method of claim 5 wherein said priority is representative of a deadline.

8. (Original) The method of claim 7 wherein said deadline is derived from a Decoding Time Stamp extracted from a header of an associated access unit.

9. (Original) The method of claim 1 wherein said subset of packets are sequenced, said subset of sequenced packets constituting an access unit.

10. (Original) The method of claim 9 wherein an access unit is a representation of a video frame.

11. (Original) The method of claim 9 wherein an access unit is a representation of an audio frame.

12 (Original) The method of claim 1 further comprising determining another subset of said one of said plurality of digital streams is associated with a new access unit.

13. (Original) The method of claim 12 wherein determining said another subset is associated with said new access unit further comprises adjusting a priority associated with said one of said plurality of digital streams.

14. (Original) The method of claim 13 wherein adjusting said priority occurs in response to a packet of said another subset being received as a first unprocessed packet.

15. (Original) The method of claim 1 further comprising maintaining a state associated with each of said plurality of digital streams.

16. (Original) The method of claim 15 wherein said state includes parameters for said processing said subset.

17. (Original) The method of claim 15 wherein said state includes pixel data representing at least one frame of video.

18. (Original) The method of claim 15 further comprising allocating memory for storing said state.

19. (Original) The method of claim 18 wherein allocating memory includes recursively subdividing a memory into quadrants to form allocation units, where one of said allocation units is a quadrant that cannot be further subdivided without at least one dimension becoming smaller than the corresponding dimension of a video frame.

20. (Original) The method of claim 18 wherein a memory is allocated in pages, where each of said pages is a contiguous memory unit of a fixed size.

21. (Original) The method of claim 20 where unallocated pages are managed using a free list configured to manage unused pages of memory.

22. (Original) Apparatus for processing a plurality of digital streams, wherein each digital stream includes packets sequenced for continuous presentation, said apparatus comprising:

means for receiving packets for each of said plurality of digital streams;

means for associating each of said packets with a respective stream of said plurality of digital streams; and

means for determining that a subset of packets of one of said plurality of digital streams is to be processed before other subsets of packets of other digital streams.

23. (Original) The apparatus of claim 22 further comprising a buffer for storing said received packets.

24. (Original) The apparatus of claim 23 further comprising
means for selecting said subset of packets for processing; and
means for retrieving said subset of packets from said buffer.

25. (Original) The apparatus of claim 22 further comprises means for assigning a priority to each of said plurality of digital streams.

26. (Original) The apparatus of claim 25 further comprises means for determining said subset of packets to be processed based on said one of said plurality of digital streams being associated with a highest priority.

27. (Original) The apparatus of claim 25 wherein said priority is representative of a deadline.

28. (Original) The apparatus of claim 26 further comprises a means for extracting a Decoding Time Stamp from a header of an associated access unit, wherein said Decoding Time Stamp is used to derive said deadline.

29 (Original) The apparatus of claim 22 further comprising means for determining another subset of said one of said plurality of digital streams is associated with a new access unit.

30. (Original) The apparatus of claim 29 wherein said means for determining said another subset is associated with said new access unit further comprises means for adjusting a priority associated with said one of said plurality of digital streams.

31. (Original) The apparatus of claim 30 further comprising means for adjusting said priority is in response to a packet of said another subset being received as a first unprocessed packet.

32. (Original) The apparatus of claim 22 further comprising means for maintaining a state associated with each of said plurality of digital streams.

33. (Original) The apparatus of claim 32 wherein said means for maintaining a state includes a memory for storing processing parameters.

34. (Original) The apparatus of claim 32 wherein said means for maintaining said state includes memory for storing pixel data representing at least one frame of video.

35. (Original) The apparatus of claim 34 further comprising means for recursively subdividing said memory into quadrants.

36. (Original) The apparatus of claim 34 further comprising means for partitioning said memory into pages, where each of said pages is a contiguous memory unit of a fixed size.

37. (Original) The apparatus of claim 36 further comprising a free list for managing unused pages of memory.

38. (Original) The apparatus of claim 36 further comprising a translation look-aside buffer for mapping virtual addresses to page addresses.

39. (Original) The apparatus of claim 36 further comprising means for retrieving pages from memory and merging data into blocks of a requested size.

40. (Original) The apparatus of claim 39 further comprising a cache for storing one or more pages that have been retrieved from memory.

41. (Withdrawn) A method of processing a plurality of streams of data, the method comprising:

identifying a single stream of said plurality of streams;

converting a subset of data corresponding to said identified single stream from a first format to a second format; and

classifying a next subset of data for said single identified stream.

42. (Withdrawn) The method of claim 41 further comprising maintaining a state associated with each of said plurality of streams.

43. (Withdrawn) The method of claim 42 wherein said state includes data that represents one or more of video, audio and non-A/V data.

44. (Withdrawn) A method of scheduling a plurality of streams of data, the method comprising:

classifying a first subset of data associated with a first stream to distinguish said subset of data from a second subset of data associated with a second stream; and

selecting only said first subset of data for conversion from a first format to a second format during a first interval of time.

45. (Withdrawn) The method of claim 44, further comprising converting from said first format to said second format during which no other of said plurality of streams are converted.

46. (Withdrawn) The method of claim 45, further comprising maintaining a state associated with said second subset during said first interval, wherein said state includes data that represents one or more of video, audio and non-A/V data.

47. (Withdrawn) The method of claim 46, wherein said data represents video and includes pixel data representing at least one frame of video.

48. (Withdrawn) The method of claim 44, wherein classifying said first subset of data comprises:
prioritizing said first and said second subsets of data; and
tagging said first and said second subsets of data with a first priority and a second priority, respectively.

49. (Withdrawn) The method of claim 48, wherein said first priority and said second priority represent respective priorities for a first stream and a second stream.

50. (Withdrawn) The method of claim 48, wherein said first priority is associated with a first duration of time to a first deadline and said second priority is associated with a second duration of time to a second deadline, where said first duration is shorter than said second duration.

51. (Withdrawn) An apparatus for converting each stream of a plurality streams, the method comprising:
a classifier module configured to assign a tag indicating a priority to data of each packet for each of said plurality of streams;
a buffer associated with each of said plurality of streams and configured to store a subset of tags; and
a packet scheduler module configured to select only one of said plurality of streams for conversion from a first format to a second format during a first interval of time.

52. (Withdrawn) The apparatus of claim 51, wherein a first packet of a frame is lower in priority than a second packet of said frame of one of said plurality of streams.

53. (Withdrawn) The apparatus of claim 51, further comprising a priority queue module configured to store the relative priorities associated with one or more subsets of tags.

54. (Withdrawn) The apparatus of claim 53, wherein said priority queue module is configured to provide a range of priorities to said packet schedule module for scheduling the conversion of data of said packet from said first format to said second format.